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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/750,308 | 12/31/2003 | Michael O'Connor | P16604 | 9709 |
| 28062 | 7590 | 08/31/2006 | EXAMINER | |
| BUCKLEY, MASCHOFF, TALWALKAR LLC 5 ELM STREET NEW CANAAN, CT 06840 | | | MITCHELL, JAMES M | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2813 | |

DATE MAILED: 08/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/750,308 | Applicant(s) O'CONNOR ET AL. | |
| | Examiner James M. Mitchell | Art Unit 2813 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-30 is/are pending in the application.
- 4a) Of the above claim(s) 7-9 and 16-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,11-14 and 27-30 is/are rejected.
- 7) ☒ Claim(s) 5,6,10 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to applicant's request for continued examination filed April 21, 2006.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 4, 27, 28 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Sato et al. (U.S. 6,081,305).

4. Sato (Fig. 1a, 1b, 2, 5, 17, 18) discloses:

(cl. 1, 27) a device comprising: a semiconductor substrate (110); a pixel cell array integrated (e.g. Fig. 2) with the semiconductor substrate; a liquid crystal layer (200) in contact with the pixel cell array (e.g. Fig. 2); a substantially transparent protective cover (300) coupled to the liquid crystal layer; and a base (500) coupled to the semiconductor substrate, wherein thermal expansion characteristics of the base (e.g. "ceramic" and glass similar CTE¹) are substantially similar to thermal expansion characteristics of the protective cover (e.g. glass);

(cl. 4, 28) a chip carrier (e.g. light device, 740 is not floating but connected/coupled to a carrier/ mounting surface via 550);

(cont. cl. 27) an Ultra High Pressure light source to emit light (700; Fig. 18);

¹ See e.g. Wang (U.S. 6,773,958) or Alcoe (U.S. 6,816,385) that evidences similar CTE.

a condenser lens (730) to condense the light; a display device (740) to receive the condensed light and to emit image light, the display device comprising: a projector lens (750) to project the image light.

(cl. 29) an electrode (302) disposed between the liquid crystal layer and the protective cover, wherein the protective cover is coupled to electrode (e.g. Fig. 2).

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 11, 12 and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Hadley et al. U.S. 6,590,346).

6. Hadley (Fig. 2A-C) discloses:

(cl. 11) a device comprising: a microdisplay integrated circuit (IC) comprising: a semiconductor substrate (Col. 11, Lines 2-3); pixel cell array integrated (e.g. multiple pixel electrodes, 206 corresponding to an array) with the semiconductor substrate; a liquid crystal layer (218) in contact with the pixel cell array; and a substantially transparent protective cover (224) coupled to the liquid crystal layer; and a chip carrier (e.g. 202) defining a recess, the microdisplay IC mounted within the recess (Fig. 2C);

(cl. 12) a foot of the recess having a first thickness (e.g. depth of recess), the first thickness substantially smaller than a thickness of the combination of the microdisplay IC and the cover (Fig. 2C);

(cl. 30) with an electrode (222) disposed between the liquid crystal (218) and the protective cover (224) with the electrode coupled to said protective cover (Fig. 2C).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (U.S. 6,081,305) in combination with Ooi (U.S. 6,975,512).

9. Sato discloses the elements stated in paragraph 4 of this office action and further that if base and cove have substantially the same thickness (Fig. 17), but it does not appear to explicitly disclose that its cover and base are of the same material.

10. However Sato discloses the same invention except that base/substrate is ceramic instead of glass, Ooi (Col. 3, Lines 29-34) shows that either glass or ceramic form equivalent structures known in the art. Therefore, because these two materials are art recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute a glass for ceramic to form a base/substrate².

11. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Hadley et al. U.S. 6,590,346) in combination with Smith et al. (U.S. 6,639,714).

12. Hadley discloses the elements stated in paragraph 6 of this office action, but fails to show a heat sink coupled to its chip carrier, or placed at the foot of the recess.

13. Smith utilizes a heat sink (36) coupled to its chip carrier (10).

14. It would have been obvious to one of ordinary skill in the art to incorporate with the carrier Hadley a heat sink in order to remove heat from the light modular as taught by Smith (Col 3, Lines 22-25).

15. With respect to the placement of the sink in claim 14, applicant has not disclosed that his placement is for a particular unobvious purpose³, produce an unexpected result, or are otherwise critical. As such, the placement would have been obvious to one of ordinary skill in the art, since it has been held prima facie obvious where parts are shifted without affecting the operation of the device. E.g. In re Japikse, held obvious that mere shifting the position of the starting switch would not have modified the operation of the device. 181 F.2d 1019, 86 USPQ 70 (CCPA 1950), In re Kuhle, 526 F.2d 553, 188 USPQ 7 (CCPA 1975) (the particular placement of a contact in a conductivity measuring device was held to be an obvious matter of design choice).

Allowable Subject Matter

² Furthermore, see M.P.E.P 2144.07 for the obviousness of selecting known materials for its intended uses.

³ Simply provides closer path for heat dissipation. See e.g. Sakamoto et al. (U.S. 6,933,604) showing sink connected to foot of recess.

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16. Claims 5, 6, 10, 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. The following is a statement of reasons for the indication of allowable subject matter: the prior art does not disclose or make obvious forming a pixel array integrated with a semiconductor substrate formed on a base that is mounted in a recess of a carrier including all the limitations of the independent claim.

Conclusion

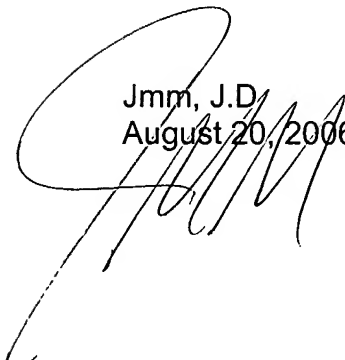
18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. the cited art further shows pixel array integrated on a semiconductor substrate.

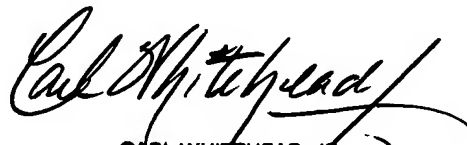
Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Mitchell whose telephone number is (571) 272-1931. The examiner can normally be reached on M-F 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jmm, J.D.
August 20, 2006




CARL WHITEHEAD, JR.
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